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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,066	01/31/2002	Ravi Prakash	CHA920010019US1	2667
23550	7590	12/23/2004	EXAMINER	
HOFFMAN WARNICK & D'ALESSANDRO, LLC			PERUNGAVOOR, SATHYANARAYA V	
3 E-COMM SQUARE			ART UNIT	
ALBANY, NY 12207			PAPER NUMBER	

2625

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/062,066	Applicant(s) PRAKASH, RAVI	
	Examiner Sath Perungavoor	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/31/2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-7,10-13,16-18 and 21 is/are rejected.
- 7) ☐ Claim(s) 2, 3, 8, 9, 14, 15, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/31/2002</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 5, 11, 13 and 18 are rejected under 35 U.S.C. 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed.

Regarding claim 5, evidence of concealment of the best mode is based upon lack of details on the enhancement system to boost the dynamic range (Page 13 Line 23), where the method used is not revealed.

Regarding claim 11, evidence of concealment of the best mode is based upon lack of details on the enhancement means to boost the dynamic range (Page 15 Line 23), where the method used is not revealed.

Regarding claim 13, evidence of concealment of the best mode is based upon lack of details on the means to boost the dynamic range (Page 16 Line 11), where the method used is not revealed.

Regarding claim 18, evidence of concealment of the best mode is based upon lack of details on the means to boost the dynamic range (Page 18 Line 13), where the method used is not revealed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al. (US 4,618,991) in view of Andrews, Brown, Caldwell and Wheeler here after referred to as Andrews (NPL, see PTO-892).

Regarding claim 1, Tabata et al. discloses a system with a rotation algorithm for rotating the image in the first direction, rotating the image in the opposite direction to the first direction and scaling to generate a reduced image (Col. 4 Lines 8-42).

However, Tabata et al. does not disclose the rotation algorithm using the weighted sums of neighboring pixels in the image prior to rotation to calculate new pixel values.

Andrews discloses a rotation algorithm using the weighted sums of neighboring pixels in the image prior to rotation to calculate new pixel values (Page 19-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teaching of Tabata et al. with Andrews to create system for image scaling by rotation using the weighted sums. All intensity values for all pixels cannot be known when one performs rotation, weighted interpolation is needed to determine the intensity values for these pixels. Since interpolation can be performed

after each rotation, one would be motivated to do so in order to generate an image of intermediate resolution.

Regarding claim 4, Andrews discloses the system of claim 1, wherein an amount of size reduction is proportional to an amount of rotation implemented by the rotation algorithm (Eq. 1).

Regarding claim 7, Tabata et al. discloses a program with a rotation algorithm for rotating the image in the first direction, rotating the image in the opposite direction to the first direction and scaling to generate a reduced image (Col. 4 Lines 8-42; Col. 5 Lines 8-11).

However, Tabata et al. does not disclose the rotation algorithm using the weighted sums of neighboring pixels in the image prior to rotation to calculate new pixel values.

Andrews discloses a rotation algorithm using the weighted sums of neighboring pixels in the image prior to rotation to calculate new pixel values (Page 19-21).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teaching of Tabata et al. with Andrews to create a program for image scaling by rotation using the weighted sums. All intensity values for all pixels cannot be known when one performs rotation, weighted interpolation is needed to determine the intensity values for these pixels. Since interpolation can be performed

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after each rotation, one would be motivated to do so in order to generate an image of intermediate resolution.

Regarding claim 10, Andrews discloses the program product of claim 7, wherein an amount of size reduction is proportional to an amount of rotation (Eq. 1).

3. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al. in view of Andrews as applied to claims 1 and 7 respectively above, and further in view of Takaoka et al. (US 6,295,385).

Regarding claim 5, Tabata et al. and Andrews meet the claim limitations as set forth by claim 1.

However, neither Tabata et al. nor Andrews disclose an enhancement system to boost a dynamic range of the image after the second reduction.

Takaoka et al. discloses an enhancement system to boost a dynamic range of the image (Col. 5 Lines 5-8).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings Tabata et al. and Andrews with Takaoka et al. to create an enhancement system, since the image reduction process will reduce the quality of image and enhancement would improve the contrast features.

Regarding claim 11, Tabata et al. and Andrews meet the claim limitations as set forth by claim 7.

However, neither Tabata et al. nor Andrews disclose an enhancement means to boost a dynamic range of the image of the final reduced image.

Takaoka et al. discloses an enhancement means to boost a dynamic range of the image of the final reduced image (Col. 5 Lines 5-8).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings Tabata et al. and Andrews with Takaoka et al. to create an enhancement means, since the image reduction process will reduce the quality of image and enhancement would improve the contrast features.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al. in view of Andrews as applied to claim 1 above, and further in view of Bergeron et al. (US 6,549,683).

Tabata et al. and Andrews meet the claim limitations as set forth by claim 1.

However, neither Tabata et al. nor Andrews disclose the final reduced image having the total pixels that is a multiple of eight.

Bergeron et al. discloses the final reduced image having the total pixels that is a multiple of eight (Col. 6 Lines 52-65).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings Tabata et al. and Andrews with Bergeron et al. to create an final image with total pixels being a multiple of eight. Since, any resolution for the image can be picked, one would pick the widely used and optimal resolution.

5. Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US 4,656,664) in view of Andrews.

Regarding claim 12, Anderson et al. discloses the method of generating an intermediate and final reduced image from the original image (Fig. 1).

However, Anderson does not disclose the pixel values being calculated based on weighted sums of neighboring pixels.

Andrews discloses the pixel values being calculated based on weighted sums of neighboring pixels (Pages 19-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teaching of Anderson et al. with Andrews to create a method for image scaling using the weighted sums. One performs weighted interpolation to determine the intensity values for pixels and minimize effects of artifacts.

Regarding claim 17, Anderson et al. discloses the system of generating an intermediate and final reduced image from the original image (Fig. 1).

However, Anderson does not disclose the pixel values being calculated based on weighted sums of neighboring pixels.

Andrews discloses the pixel values being calculated based on weighted sums of neighboring pixels (Pages 19-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teaching of Anderson et al. with Andrews to create a system for

image scaling using the weighted sums. One performs weighted interpolation to determine the intensity values for pixels and minimize effects of artifacts.

6. Claims 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. in view of Andrews as applied to claim 12 and 17 respectively above, and further in view of Takaoka et al.

Regarding claim 13, Anderson et al. and Andrews meet the claim limitations as set forth by claim 12.

However, neither Anderson et al. nor Andrews disclose an enhancement means to boost a dynamic range of the image of the final reduced image.

Takaoka et al. discloses an enhancement means to boost a dynamic range of the image of the final reduced image (Col. 5 Lines 5-8).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings Anderson et al. and Andrews with Takaoka et al. to create an enhancement means, since the image reduction process will reduce the quality of image and enhancement would improve the contrast features.

Regarding claim 18, Anderson et al. and Andrews meet the claim limitations as set forth by claim 17.

However, neither Anderson et al. nor Andrews disclose an enhancement means to boost a dynamic range of the image of the final reduced image.

Takaoka et al. discloses an enhancement means to boost a dynamic range of the image of the final reduced image (Col. 5 Lines 5-8).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings Anderson et al. and Andrews with Takaoka et al. to create an enhancement system, since the image reduction process will reduce the quality of image and enhancement would improve the contrast features.

7. Claims 16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. in view of Andrews as applied to claim 12 and 17 respectively above, and further in view of Bergeron et al.

Regarding claim 16, Anderson et al. and Andrews meet the claim limitations as set forth by claim 12.

However, neither Anderson et al. nor Andrews disclose the intermediate reduced image having the total pixels that is a multiple of eight.

Bergeron et al. discloses the reduced image having the total pixels that is a multiple of eight (Col. 6 Lines 52-65).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings Anderson et al. and Andrews with Bergeron et al. to create an intermediate reduced image with total pixels being a multiple of eight. Since, any resolution for the image can be picked, one would pick the widely used and optimal resolution.

Regarding claim 21, Anderson et al. and Andrews meet the claim limitations as set forth by claim 17.

However, neither Anderson et al. nor Andrews disclose the final reduced image having the total pixels that is a multiple of eight.

Bergeron et al. discloses the final reduced image having the total pixels that is a multiple of eight (Col. 6 Lines 52-65).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings Anderson et al. and Andrews with Bergeron et al. to create a final reduced image with total pixels being a multiple of eight. Since, any resolution for the image can be picked, one would pick the widely used and optimal resolution.

Allowable Subject Matter

8. Claims 2, 3, 8, 9, 14, 15, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art Cited

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Williams et al. (US 5,579,418) discloses an interpolation method with image rotation.

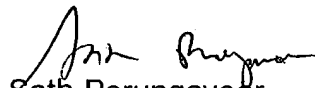
Levien (6,097,855) discloses an image rotation method.

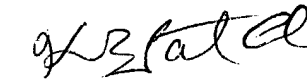
Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sath Perungavoor whose telephone number is (703) 306-4116. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta whose telephone number is (703) 306-4165246, can be reached on Monday to Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sath Perungavoor
Art Unit 2625
December 9, 2004


KANUBHAI PATEL
PRIMARY EXAMINER